

Triennial Report 2020–2022

German-Algerian Energy Partnership



Imprint

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Contact: German-Algerian Energy Partnership Support Project

Address: 20B rue Mohamed Khoudi, El Biar, Algiers

Email : frank.renken@giz.de; ryma.bouakaz@giz.de

Website: www.energypartnership-algeria.org

Tel.: +213 23 05 13 19

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Photo credits

Thorsten Herdan: p. 6

Hamza Ourtemache: p. 7

Ryma Bouakaz: pp. 8, 9, 10, 12, 14, 15, 17, 18, 19, 22, 23, 24, 25, 27, 28, 29, 32, 33, 34 & 36

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German-Algerian Energy Partnership

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INTRODUCTION

Since its creation in 2015, the German-Algerian Energy Partnership has promoted high-level discussions between Germany and Algeria on the political, technical and economic aspects of energy.

To deliver on its mission to support and facilitate exchange between the companies and governments of the two countries, in the course of 2019 the Energy Partnership carried out an array of activities and major events: workshops, conferences and study tours were organised, key reference documents (e.g. the Grid Code) were produced and Algeria's first business energy efficiency network (REEE) was launched. Since 2021 the Energy Partnership has been paving the way for cooperation between the two countries on green hydrogen and promoting dialogue between governments and actors from the natural gas sector.



KEY ACHIEVEMENTS IN 2020–2022



1 Renewable energy for the MENA region



On 30 January 2020 in Berlin, GIZ's Bilateral Energy Partnerships project held the first event for the Middle East and North Africa (MENA) region dedicated to German companies. On behalf of the German Federal Ministry for Economic Affairs and Climate Action (BMWK) and in collaboration with the German Renewable Energy Federation (BEE), GIZ invited companies from the solar and wind power sector to provide information and advice on current needs and challenges in Morocco, Algeria, Tunisia, Jordan, Saudi Arabia and the United Arab Emirates.

Thorsten Herdan, Director-General for Energy Policy at BMWK, highlighted how, with efforts to implement the Paris Agreement under way, MENA countries are of particular interest given their geographical proximity to Europe and their abundance of renewable energy resources.

The technological and regulatory know-how that Germany has acquired over recent decades and the good political relations provide the right framework for growing exports, fostering knowledge exchange and working with partner countries to promote the global energy transition.

In the discussions during the day, participants shared that the key challenges to successful market entry were in the areas of financing and investment. The German companies also reported that they see great value in being able to make contact with local companies, secure easier access to tender competitions and actively engage in relevant events in partner countries.

2 Launch of the Green Municipalities project



Launched on 1 April 2020, the Green Municipalities project is being implemented by GIZ Algeria on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ) and in cooperation with Algeria's Ministry of the Interior, Local Authorities and Territorial Planning (MICALAT).

Both Germany and Algeria are committed to reducing their greenhouse gas (GHG) emissions within the framework of international climate negotiations. As an industrialised nation, Germany is also committed to supporting efforts to reduce emissions in developing and emerging countries. As an emerging economy, Algeria has made its Nationally Determined Contribution targets conditional on international financial and technical support. The plan is to reduce emissions between 2020 and 2030 by 7% without international support and by 22% with international contributions.

The energy transition plays a key role in the new Algerian government's action plan, with a view to reducing dependency on

oil and gas, ensuring the efficient use of natural resources and creating jobs, with the involvement of different sectors including housing, industry and transport. The German-Algerian Energy Partnership is therefore supporting Algeria's energy sector actors in their efforts to deliver the energy transition and thus help the country meet its national targets on CO₂ emission reductions.

The aim of the Green Municipalities project is to improve energy management in Algerian municipalities in terms of financial sustainability and climate protection, helping them to achieve sustainable energy and cost savings through energy efficiency measures and renewable energy technologies. It therefore complements the German development cooperation priority area 'Environment' as an important line of action for Algeria going forward. The project also works on developing the regulatory framework for renewable energy and energy efficiency and supports market development.

3 Fifth meeting of the Business Advisory Council with German companies in Algeria, an energy sector forum



On 20 December 2020 the German-Algerian Energy Partnership held its fifth Business Advisory Council with German companies in Algeria, hosting the session online for the first time.

Participating in the event were Ellen von Zitzewitz from BMWK and representatives from the German Embassy in Algiers, Germany's KfW Development Bank, the German-Algerian Chamber of Industry and Commerce (AHK Algeria) and the German Solar Association (BSW), along with 11 German companies operating or interested in the Algerian energy sector.

The meeting provided the German-Algerian Energy Partnership

with the opportunity to present its forthcoming activities and discuss important topics, such as green hydrogen, the profitability of solar projects in Algeria and the digitalisation of the energy sector. There were also presentations from KfW on financing opportunities and from AHK Algeria on its activities in the country's energy sector.

To conclude the session, the participants discussed current issues and potential challenges for German companies in the Algerian market and considered approaches to promote their involvement in the country.

4 Green hydrogen in Algeria



On 15 February 2021 an inception workshop was held to launch a groundbreaking study on Algeria's potential for green hydrogen. The session was opened by Merouane Chabane, Permanent Secretary of Algeria's new Ministry of Energy Transition and Renewable Energy (MTEER), who emphasised Algeria's potential in this area and the importance of the work of the German-Algerian Energy Partnership.

Attending alongside the MTEER participants were representatives from the industrial giant Sonatrach (Algeria's state-owned oil and gas company) and the Renewable Energy Development Centre (CDER) as well as German consultants from GIZ, acting on behalf of BMWK, and from Tractebel Engineering GmbH, the consultancy firm tasked with carrying out the scoping study.

The study comes in response to the global trend towards employing 'power-to-X' (PtX) technologies as a means to transform power (i.e. electricity from renewable sources) into stored energy. The 'X' can stand for heat, hydrogen, gas, liquid or chemicals in general. The most interesting

products of the PtX process are hydrogen and other gases, which can be used in diverse industrial processes. Producing these gases in an eco-friendly way, using electrolysis and factories powered by renewable energy, therefore represents a major step towards reducing emissions from heavy industry and the transport sector.

Given Algeria's existing oil and gas sector infrastructure (pipelines, liquefied gas terminals, etc.), industrial gas industry, exceptional wind and solar power potential and proximity to European markets, the country has the potential to become a supplier of green hydrogen and other valuable gases. Such domestic production of green hydrogen would represent a significant opportunity for Algeria to diversify its traditional markets in line with the government's diversification strategy.

The scoping study seeks to shed light on aspects such as international demand for PtX/green hydrogen and the market share that Algeria could occupy, opportunities to export new products and the potential of Algeria's local market for green hydrogen and its derivatives, particularly green ammonia. It also aims to provide a preliminary roadmap for establishing a full-scale PtX industry in Algeria over the coming decades (with a timeline to 2030 and 2050), along with an action plan to be implemented by the Algerian authorities.

5 Train-the-trainer initiative for energy managers in industry



Managing the production and consumption of energy is a priority for Algeria given its national and international commitments on the environment and sustainable energy supply. In this context, advances in energy efficiency, under the National Energy Efficiency Programme 2016–2030 (PNEE) seek, on the one hand, to achieve savings in final energy consumption and, on the other, to guarantee direct impacts on the national economy.

For industrial firms, the challenge is not just about addressing technical issues,

but also about managing energy and human resources. It is therefore vital that all such firms recruit and train a qualified person for the role of ‘energy manager’ to manage energy consumption in a sustainable and systemic way and thereby:

- Reduce costs
- Reduce environmental impact
- Increase competitiveness

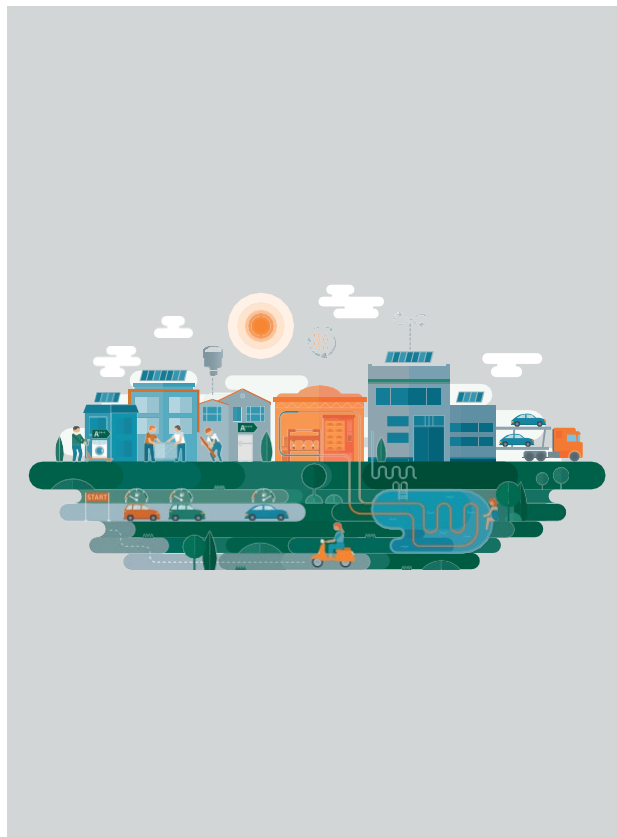
In light of this need, the German-Algerian Energy Partnership made capacity building for energy managers in industry one of its action areas. GIZ enlisted Germany's Renewables Academy (RENAC) to develop a train-the-trainer (TTT) programme for trainers at Algeria's National Agency for the Promotion and Rationalisation of Energy Use (APRUE), who will teach the Responsible Energy Management in Industry training course.

The TTT programme aims to provide APRUE trainers with the instructional and methodological tools they need to deliver advanced and interactive training. It also walks them through the different technical modules of the Responsible Energy Management in Industry course, so they all have the same level of knowledge and understanding of the training content.

The training programme's technical content covers the following areas:

- Current energy regulations and energy billing in Algeria as they relate to energy management
- Energy monitoring and management
- Energy audit process
- Energy efficiency in processes and technologies used in industry
- Energy management according to ISO 50001

The TTT programme was delivered in two parts: online training was provided in February 2021 covering the technical subject matter on energy efficiency in industry, and in-person training was provided on the first three days of the following month covering instructional and pedagogical aspects and culminating with the certification exam.



6 Study tour to explore Germany's energy transition legislation


On 5 May 2021, officials from MTEER, BMWK, the Algerian Electricity and Gas Regulation Commission (CREG), GIZ and the German Energy Agency (DENA) took part in a virtual study tour aimed at promoting exchange on the governance of renewable energy.

The main objective of the tour was to provide a detailed overview of the similarities and differences between the design of Algeria and Germany's respective electricity markets. Discussions centred on regulations, tendering mechanisms and direct marketing for renewable energy projects.


Specialists from DENA explained the fundamentals of Germany's Renewable Energy Sources Act (EEG) and its role in the deployment of renewable energies.

Since the EEG came into force in 2000, the electricity market and electricity generation in Germany have undergone a process of liberalisation, which has enabled a distribution of powers among the different actors. Today, there are several system operators covering different regions, a regulatory office, a spot market and a futures (options) market. Among its provisions, the EEG includes measures for the safe and efficient deployment of renewable electricity based on:

- Guaranteed network access and priority dispatching
- Technology-specific deployment corridors for adding capacity
- Support payment: feed-in premium and auctions
- An EEG surcharge on electricity consumers to offset the support payment costs
- Regular monitoring and evaluation



**Partenariat Énergétique
Energiepartnerschaft
Algérie-Allemagne**



Virtual Study Tours: Governance of Renewable Energy
Workshop 1 – Calls for tenders and direct marketing for renewable energy projects

Date: 05.05.2021, 11:00 CEST

Duration: 2.30h

Moderation: Dr. Frank Renken, GIZ, Conseiller principal du Partenariat énergétique algéro-allemand

Participants: M. Fouzi Benzaid, Ministère de la Transition Énergétique et des Énergies Renouvelables (MTEER), Directeur des énergies renouvelables raccordées au réseau électrique national
M. Mourad Chikhi, Ministère de la transition énergétique et des énergies renouvelables (MTEER), Directeur de l'Autoconsommation et des Énergies Renouvelables hors réseau
M. Kamel Dali, Directeur Général de l'Agence Nationale pour la Promotion et la Rationalisation de l'Utilisation de l'Énergie (APRU)
Mme. Fouzia Benazza, MTEER, Sous Directrice (Autoconsommation et des Énergies Renouvelables hors réseau)
M. Saoubekeur Bairi, Chef de Bureau (Énergies Renouvelables raccordées au réseau électrique national)
M. Abdelmalek Rokai, Chef de Bureau (Énergies Renouvelables raccordées au réseau électrique national)
Mme. Chafika Behlouj, Commission de Régulation de l'Électricité et du Gaz (CREG)
M. Ali Zaitout, Ingénieur d'Études, Sonelgaz
M. Abdallah Babil Toumi, Ingénieur d'Études, SKTM / Sonelgaz
M. Karim Keddad, Ingénieur, Direction Centrale des Ressources Nouvelles / Sonatrach
Mme. Ellen von Zitzewitz, Ministère de l'Économie et de l'Énergie allemand (BMWK)
Dr. Jochen Fischer, Avocat, Agence GUSC (Prandorf)
M. Thor Fischer, German Energy Agency (dena)
M. Manuel Battaglia, German Energy Agency (dena)
M. Joscha Müller, German Energy Agency (dena)
M. Salaheddine Bouzerd, GIZ Alger, Partenariat énergétique algéro-allemand
Mme. Rym Bouakaz, GIZ Alger, Partenariat énergétique algéro-allemand
Mme. Franziska Beck, GIZ, Projet DIAPOL
Mme. Anja Richter, GIZ, Projet DIAPOL
M. Peter Keenz, GIZ, Global project Bilateral Energy Partnerships (Berlin)

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7 Conference on the business energy efficiency network concept



The business energy efficiency network (REEE) is today considered one of the best tools for the large-scale promotion of energy efficiency in industrial facilities, particularly those of a medium size, because it enables them to gain the expertise and know-how required to set up and carry out an energy efficiency programme and put in place the tools needed to monitor progress on the goals set.

As the number of REEEs grows, Algeria will be able to reach an increasing number of industrial companies with its National Energy Efficiency Programme and to maximise on the energy-saving potential of the industrial sector.

Organised by APRUE, under the direction of MTEER, and supported by the German-Algerian Energy Partnership, this conference on the REEE concept had the following objectives:

- Promote the National Energy

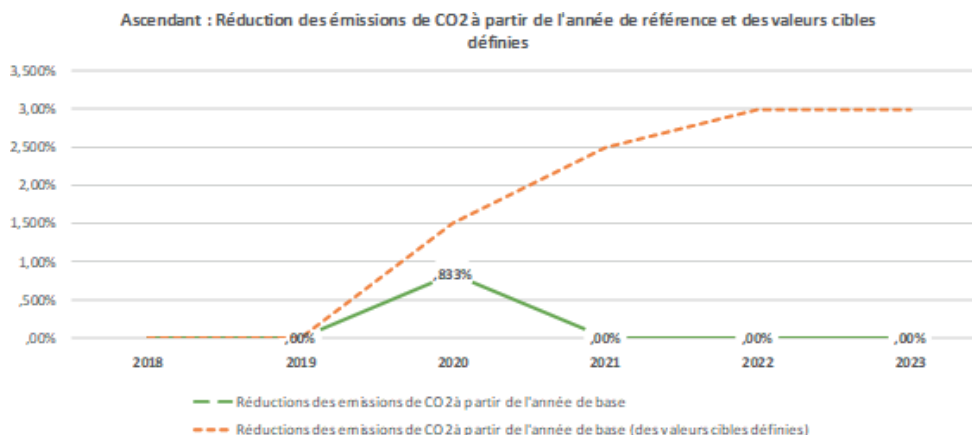
Efficiency Programme, raise awareness about the REEE concept among Algerian organisations and encourage industrial operators to join the network.

- Within the framework of the REEE, facilitate networking and the sharing of experiences in the areas of energy efficiency and energy saving and learn from Germany's experience in this field.

The effort put into this conference was amply rewarded when three industrial groups agreed in principle to set up their own REEEs. Furthermore, fruitful discussions with the different participants gave rise to the following conclusions on what needs to be done:

- Replicate the REEE concept for other industrial companies.
- Ramp up communication activities to spread knowledge of the pilot REEE, in particular through seminars and webinars.
- Share experiences and good practices for energy efficiency in companies.
- Build the participation of REEE member companies in the National Energy Efficiency Programme.
- Develop new REEEs in other sectors (service sector and local government).
- Run REEE information campaigns aimed at industrial facilities.
- Conduct ongoing monitoring of the pilot REEE.
- Establish a capacity building programme for industrial operators.

8 Evaluating progress on the REEE's energy efficiency measures



As part of the Energy Partnership's work, in July 2019 a pilot business energy efficiency network (REEE) was established with the participation of eight Algerian companies and the support of two international experts and four national auditors. At regular meetings moderated by a national facilitator, these REEE member companies come together to share their experiences in energy efficiency.

With the support of GIZ and local and international experts, the REEE member companies have been able to evaluate their energy consumption, identify energy efficiency measures to be implemented and establish energy efficiency action plans to carry out over the lifetime of the network with a view to achieving the average targets of an 8% saving in energy and a 10% reduction in CO₂ emissions.

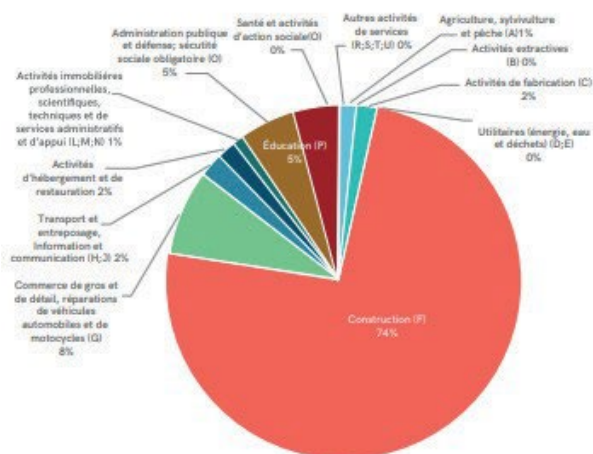
Monitoring work was carried out for an initial review of

progress on the energy efficiency measures implemented by REEE members under their respective action plans. It looked at the impact of these measures on reducing energy consumption and CO₂ emissions compared against the baseline year of 2019 when an energy audit was carried out. The monitoring was carried out using a digital tool developed as part of the project.

Efforts to meet the target of a 1% saving in energy in 2020 achieved a 0.7% saving. This is a satisfactory result given the challenges that arose due to the COVID-19 pandemic at that time and taking into account that most of the measures required feasibility studies, which took additional time to complete.

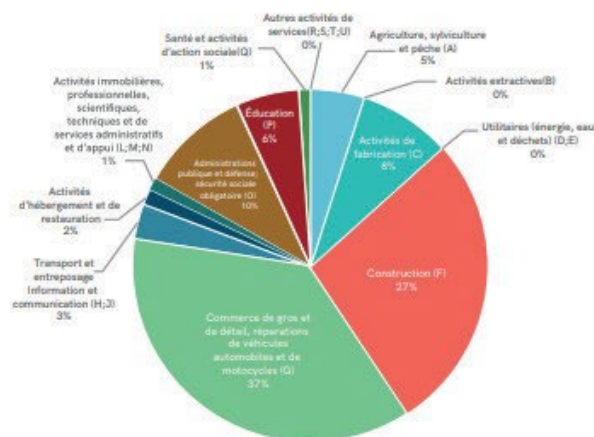
9 Regional impact of renewable energy on Algeria's labour market

Figure 11 : Emploi par activité économique dans la wilaya d'Illizi



Source : Calculs par GWS et compilation basée sur l'OIT et l'ONS

Figure 12 : Répartition de l'emploi par activité économique, wilaya d'Adrar



Source : Calculs par GWS et compilation basée sur l'OIT et l'ONS

Under the German-Algerian Energy Partnership, experts from the Institute of Economic Structures Research (GWS), a German consultancy firm, carried out a study on the regional impacts of renewable energy on the labour markets of the Algerian provinces of Adrar and Illizi. This study complements the 2018 report also produced by GWS on local economic development achieved through

renewable energy projects implemented in Algeria.

GWS's preliminary labour market study indicates that the planned expansion of renewable energy would provide more than 130,000 people with jobs. The effects on the job market are both direct and indirect. The direct effects are related to

the installation process, ongoing operations, maintenance and security. The indirect effects are associated with demand on suppliers for the goods and services required. The issue of the regional distribution of the effects of additional value creation must be addressed taking into account the major differences between regions. The GWS study therefore provides estimates of job creation potential at the national level and more detailed information on the Adrar and Illizi regions. The job factor of 4.7 jobs per MW arrived at for wind power differs only slightly from the value of 5 jobs per MW used previously. However, the regional findings for solar photovoltaic (PV) projects indicate much higher job factors than previously thought. For Illizi Province, the values range roughly between 8 and 12 jobs per MW, while for Adrar Province, the job factors are lower, ranging from 4 to around 6 jobs per MW.

Based on these figures, the installation of PV plants with a capacity of 100 MW would create 400 to 600 new jobs in Adrar Province and 800 to 1,200 new jobs in Illizi Province. These results show that expanding electricity generation based on renewable energy opens up major opportunities in the job market, in particular in regions located in the structurally weak areas in the south of Algeria.

Both of the GWS studies mentioned here (2018 and 2021) are available (in French) for download on the German-Algerian Energy Partnership website: www.energypartnership-algeria.org.



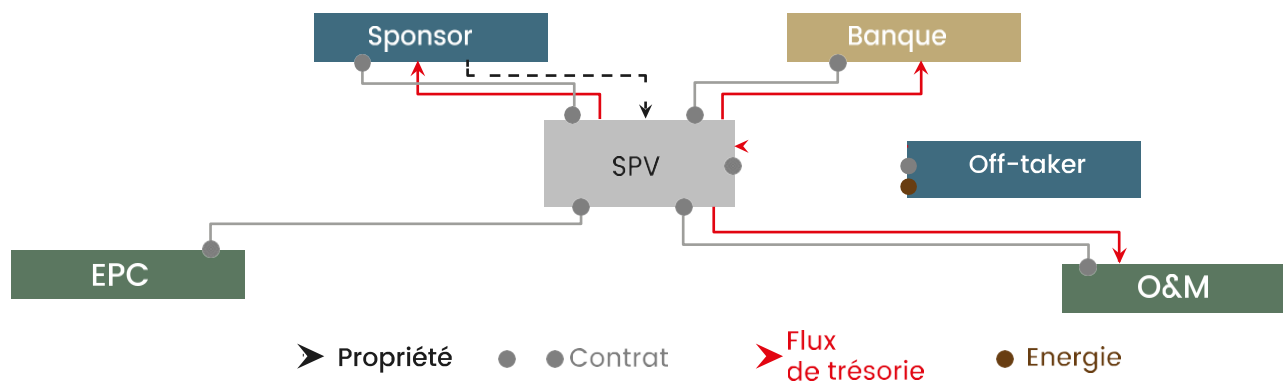
10 Bankability of solar projects in Algeria

The German-Algerian Energy Partnership and a consortium comprising the European Photovoltaic Industry Association (EPIA), Finergreen and Sungy worked together to create a guide on the bankability of solar projects, with the aim of supporting investors in the development of bankable PV projects in the Algerian market.

A solar project is deemed bankable when its legal framework, contractual structure and technical characteristics provide investors (debt and equity) with sufficient visibility on the risks and revenues associated with the project. This guide describes the different factors influencing the bankability and profitability of investments in electricity generation from solar PV plants in Algeria and sets out recommendations for improving the bankability of such projects in the

country. Algeria has the natural assets required to guarantee the highly competitive production of solar energy production, yet its regulatory framework and the contractual packages proposed in tender processes provide insufficient visibility on revenues. Certain risks, such as political or currency risks, remain high in Algeria and are exacerbated by the limited availability of risk hedging tools. In addition, the limited availability of bank financing also increases risks and reduces profitability for investors.

The bankability guide is available (in French) for download on the German-Algerian Energy Partnership website: www.energypartnership-algeria.org.



11 Virtual study tour on biomass and bioenergy

On 11 November 2021, representatives from Algeria's MTEER, CREG and Ministry of Energy and Mining (MEM) and from Germany's BMWK, GIZ and DENA took part in a virtual study tour, which provided them with the opportunity to exchange on the governance of renewable energy, with a focus on biomass.

The main objective of the event was to provide an overview of the German bioenergy market and address issues relevant to the Algerian market. Experts from DENA also gave a presentation on the regulatory framework for bioenergy and biomass in Germany. In the ensuing discussions, the DENA experts and others fielded questions on the opportunities to develop biomass as an energy source in collaboration with German companies operating in Algeria.



To show how things work in practice, a representative from the municipal agency Berlin Waste Management (BSR) gave a presentation on the organisation's experiences and the good practices it employs at its biogas plant in Berlin's Ruhleben area. Tour participants also heard a presentation on the experience of using bioenergy at a sugar refinery in Anklam, a small town in the north-east of Germany.

12 Scoping study on the potential of green hydrogen in Algeria

Within the framework of the German-Algerian Energy Partnership and in collaboration with the German company Tractebel, the first scoping study on Algeria's potential for power-to-X (green hydrogen) has been carried out.

The study's main objective was to determine the viability of PtX technologies in Algeria through an in-depth analysis of the energy market, technology deployment and the potential of renewable energy, socio-economic and environmental resources. Green hydrogen was the focus of this study given the maturity of the oil and gas sector in Algeria and its enormous potential in terms of renewable energy. The main PtX products addressed in the study were therefore green hydrogen and ammonia. The scoping study's findings will contribute to the formulation of a PtX roadmap and action plans for Algeria to be implemented over the short, medium and long term to 2030 and 2050.

The report on the scoping study is available (in French, with an executive summary in English) for download on the German-Algerian Energy Partnership website: www.energypartnership-algeria.org.



13 Third German-Algerian Energy Day

Green hydrogen in Algeria – potential and prospects for cooperation



Within the framework of the German-Algerian Energy Partnership, on 9 December 2021 Algeria's MEM, in collaboration with MTEER and Germany's BMWK,

organised the third German-Algerian Energy Day in Algiers, under the theme 'Green hydrogen in Algeria – potential and prospects for cooperation'.

As part of its economic recovery plan, the Government of Algeria has made the energy transition to new and renewable energies a priority area, seeking to deliver 'green' growth by means of innovative digital energy technologies.

This third Energy Day brought together the key actors involved in this field, with representatives from relevant ministries and institutions, economic operators and academia in attendance. The opening ceremony was honoured by the presence of Prof. Ben Attou Ziane, Minister of Energy Transition and Renewable Energy, who opened the event; Abdelkrim Aouissi, Secretary-General of MEM; Her Excellency

Elisabeth Wolbers, Germany's Ambassador to Algeria; Nouredine Yassa, Commissioner for Renewable Energy and Energy Efficiency; and Christine Falken-Grosser, Head of the Bilateral Energy Cooperation Division at BMWK. The event served to place the development of green hydrogen among the primary goals of the Algerian Government, and an ambitious national plan is now being drawn up, focusing on Algeria's undeniable assets in this area and the country's intention to maintain its position as a major player on the global energy scene by developing all its natural resources.



9 December 2021

The conference included interactive debates on complex questions arising in the energy industry with regard to the economic, financial, technological and environmental challenges involved in developing low-carbon technologies, such as hydrogen as an energy carrier. It also emphasised the German-Algerian Energy Partnership's prospects in this area and, in particular, the importance of the scoping study on the potential of power-to-X (green hydrogen) in Algeria, carried out by international and Algerian consultants and covering the period up to 2050.

It was also highlighted at the event that, when developing low-carbon technologies such as hydrogen and particularly green hydrogen, it is necessary to

take into account the disparities between countries in terms of development and financial capacity. Likewise, the challenges and issues facing the energy industry are such that even greater efforts and a balanced and mutually beneficial partnership are required to harness Germany and Algeria's potential, with a view to promoting the development of research and expertise on technologies for clean energy, in particular renewable energy and energy efficiency.

In this context, Algeria is seeking to accelerate the country's energy transition and ensure its success through its National Renewable Energy Development Programme. This will involve new technologies for low-carbon fossil fuels and the promotion of investment in the most efficient energy infrastructure and technologies.



14 Training and networking for professionals working for electricity system operators

Within the framework of the German-Algerian Energy Partnership, a national workshop was held over three days (6, 13 and 14 December 2021) for engineers from Algeria's system operator. It involved capacity building and direct experience sharing on regional electricity exchange between the transmission system operators of Germany, Algeria, Tunisia and Jordan. The training was provided by experts from Elia Grid International and 50Hertz.

A rich agenda generated a great deal of interest among the engineers participating in the training event, which also featured quality discussions and debates on the following subjects:

- 1- Development of network planning methods for medium- and long-term studies relating to renewable energy integration
- 2- Impact of renewable energy integration on the operational processes of system operators
- 3- Flexibility of the electrical system in the context of renewable energy integration: needs and means
- 4- Role of interconnections and regional integration: regional integration in the European balancing model

5- Stability analysis for a system with a high renewable energy share

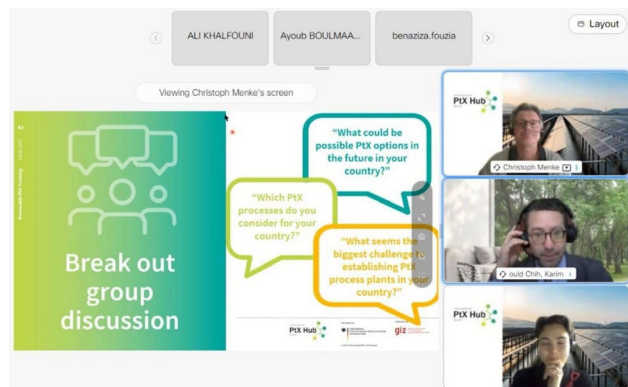
6- Role of new technologies in the context of renewable energy integration: impact and studies required

7- Political role and positioning of the system operator as a trusted actor in the energy transition context

The concluding session provided the opportunity to recap the main findings, key elements and lessons learned on local impact and to outline the system operator's priorities.



15 Green hydrogen training for policy-makers



Within the framework of the German-Algerian Energy Partnership and in collaboration with Germany's KfW Development Bank, on 14–16 February 2022 online training was provided on renewable PtX and green hydrogen. The power-to-X or PtX concept encompasses all technologies, processes and products that make it possible to transform electricity ('power') into other forms of energy, either in gas or liquid form. The Algerian participants comprised representatives from MTEER, MEM and various agencies and research institutes including APRUE, Algerian state-owned renewable energy company SHAEMS, Sonatrach, Sonelgaz, Batna Higher National School of Renewable Energies, Environment and Sustainable Energies, CREG, the Commission for Renewable Energy and Energy Efficiency (CEREFÉ), CDER and the Research Centre for Semiconductor Technology for Energetics (CRTSE).

The main aim of this training was to promote

networking and the sharing of expertise with specialists from the German technology centre International PtX Hub. The training

was structured into seven modules (Introduction to the renewable PtX concept, Production, Economics, Infrastructure, Markets, Sustainability criteria, and Supporting policies and regulations) and included presentations on the technical, regulatory, financial and strategic aspects of green hydrogen technologies and their contributions to the energy transition. In addition, a workshop was held to discuss opportunities for developing green hydrogen in Algeria

The following recommendations emerged for the development of green hydrogen in Algeria:

- Promote the large-scale deployment of renewable energy in Algeria.
- Further capitalise on the fruitful relations between Algeria and Germany, buoyed by their mutual interest in developing renewable energy.
- Identify mechanisms for financing PtX projects in Algeria.
- Put measures in place to promote PtX technologies.
- Propose setting up a pilot scheme to produce green hydrogen (semi-industrial scale).
- Emphasise the role of research and training in this area, thanks to scientific and academic collaboration between the two countries.

16 Sixth meeting of the Business Advisory Council with German companies in Algeria



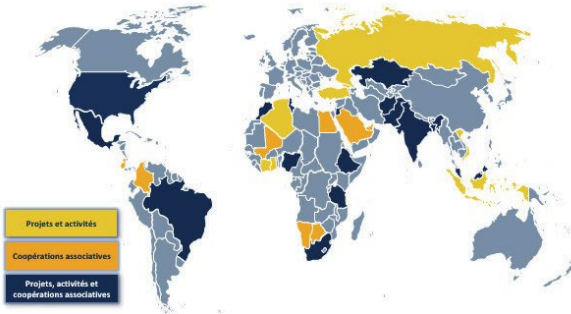
On 16 March 2020 at the headquarters of AHK Algeria, the German-Algerian Energy Partnership held the sixth meeting of its Business Advisory Council with German companies in Algeria. The main purpose of the session was to discuss new developments in the field of renewable energy and green hydrogen in Algeria and explore how to further deepen Algeria and Germany's bilateral energy partnership and strengthen the role of German companies in this framework.

The meeting was attended by Her Excellency Elisabeth Wolbers, Germany's Ambassador to Algeria; the German Embassy's Minister-Counsellor and Head of its Economic Department;

Ellen von Zitzewitz, Deputy Director of International Energy Relations at BMWK; Judith Kammerer BMZ; the Senior Project Manager at KfW; representatives from AHK Algeria, the German-Algerian Energy Partnership and BSW and numerous representatives from companies including Siemens, Linde Gas, BASF, Messer, the Algerian Infrastructure Studies Company (SAETI), Liebherr, Rheinmetall, ib vogt, Alexander & Partner law firm, Slimred, and Germany Trade & Invest (GTAI).

17 Meeting to discuss the call for tenders for Solar 1,000 MW

Notre vision internationale: Avec nos partenaires, nous travaillons ensemble pour améliorer les conditions-cadres de l'énergie solaire dans le monde entier !



Within the framework of the German-Algerian Energy Partnership, on 24 March 2022 a meeting was held between the Algerian company SHAEMS and Germany's BSW, aimed at raising Algeria's profile as a strategic market for German companies in the renewable energy sector, with a focus on solar PV systems.

SHAEMS was set up by Sonelgaz and Sonatrach to lead on the operationalisation of the Algerian solar programme, under the authority of MTEER. Representatives from the company gave a brief presentation on Algeria's National Renewable Energy Development Programme, which stipulates the installation of 1,000 MW each year up to 2035. They also described SHAEMS' role in the Solar 1,000 MW call for tenders issued in December 2021.

For their part, the BSW consultants provided an overview of the German solar industry and the role BSW plays in providing policy advice, public relations and market observation services in Germany and internationally.

The main subject of discussion was the tender specifications for investors, especially the question of SHAEMS having a stake in each of the project companies set up once the investors are selected and its role in securing the various permits required.

The German-Algerian Energy Partnership has produced a brochure on the Algerian solar market in German and French, which is available to investors interested in entering the Solar 1,000 MW tender competition.

18 Algeria takes part in the Berlin Energy Transition Dialogue



As part of the activities carried out to implement the German-Algerian Energy Partnership, Prof. Ben Attou Ziane, Minister of Energy Transition and Renewable Energy, represented Algeria at the eighth Berlin Energy Transition Dialogue, held on 29 and 30 March 2022.

This annual high-level event is organised and supported by the German Federal Government, in cooperation with BEE,

BSW, DENA and eclareon, and coordinated by GIZ. It brings together prominent experts and politicians involved in the fields of energy, energy transition, industry, the environment and scientific research.

The theme of this eighth dialogue was 'Energy Transition – from Ambition to Action'. Many of the discussions were therefore focused on the measures needed to achieve the climate targets set for 2030 and on the adoption of new approaches to ensure a successful energy transition.

19 The solar photovoltaic market in Algeria



Algeria's energy sector and the country's economy as a whole are highly dependent on oil production and export. However, recent years have seen considerable growth in domestic demand at the expense of exports. Today, solar PV power is the renewable source that contributes most, by far, to the country's energy mix – although its share in the total remains small.

As part of the German-Algerian Energy Partnership's work to promote lasting cooperation between Algeria and representatives of Germany's solar sector, a brochure was put together for German solar sector companies on the Algerian PV market in general and the Solar 1,000 MW call for tenders in particular.

The brochure is available (in French) to download on the German-Algerian Energy Partnership's website: www.energypartnership-algeria.org.

20 Algeria sends a delegation to the Intersolar Europe exhibition



Within the framework of the German-Algerian Energy Partnership and in cooperation with BSW, an Algerian delegation comprising representatives of MTEER and SHAEMS attended the Intersolar Europe and Smarter E Europe exhibition, held from 10 to 12 May 2022 in Munich.

The delegation visited different exhibition stands of companies in the renewable energy value chain and attended a number of meetings with German industrial companies active in the energy transition domain. The delegation also had the opportunity to meet with the Bavarian State Minister for Economic Affairs, Regional Development and Energy, who made clear his wish to forge ties with Algeria for cooperation in a range of areas, in particular green hydrogen.

On 12 May 2022 the Energy Partnership facilitated a workshop at Intersolar Europe on the Algerian PV market, Algeria's National Renewable Energy Development Programme and the Solar 1,000 MW call for tenders issued by SHAEMS. Present at the session were His Excellency Smail Allaoua, Algeria's Ambassador in Berlin, and Ellen von Zitzewitz, representative of BMWK and head of the Bilateral Energy Partnerships project. Both expressed their commitment to promoting and further enhancing cooperation in the field of renewable energy under the German-Algerian Energy Partnership.

21 Munich hosts the first Women Energize Women conference



On 12 May 2022 the first ever Women Energize Women conference took place at Munich's Smarter E Europe exhibition, the continent's largest platform for the energy industry. More than 250 energy experts from more than 50 countries took part in talks, discussions, workshops and other sessions, addressing pressing issues around energy and gender

from a woman's perspective. Implemented on behalf of BMWK by GIZ and in collaboration with BEE under the Bilateral Energy Partnerships framework, the conference was the high point of the Women Energize Women campaign. It was also the first of its kind to provide a platform

dedicated solely to women energy experts, sending an important signal to an industry that is still dominated by men globally.

Women's under-representation in the energy sector is illustrated in an International Renewable Energy Agency (IRENA) study which reveals that women make up only 22% of the workforce in the fossil fuels sector and 32% in the renewable energy sector.

Women's perspectives are not just vital for shaping the energy transition so that it meets the needs of society as a whole; studies show that when there is a greater representation of women, including in leadership positions, there is greater capacity for innovation and collaboration in the workplace, and companies' economic performance and sustainability improve. Worldwide, it is estimated that the number of jobs in renewable energy is set to more than triple between now and 2050.

If the energy transition is to be ramped up and accelerated as is required to meet agreed climate targets, the sustainable energy sector must harness human talent in all its forms and promote innovation across a vast array of skills, applications and specialisations. Empowering women experts is therefore the answer to the talent shortage in the sustainable energy sector.

Three inspirational women opened the conference: Ellen von Zitzewitz, Deputy Director of International Energy Relations at BMWK; Ingrid-Gabriela Hoven, Managing Director of GIZ; and Dr Simone Peter, President of BEE. Stressing the importance of women's representation, Ms Hoven said, 'The energy sector is still considered – wrongly – to be a male domain.

This overlooks the impressive contributions women around the world are already making as drivers of innovation and technical experts'. During the event, a variety of high-level decision-makers and sector experts led engaging debates on subjects including the efficiency and scalability of green hydrogen, pressing issues around the energy transition, and women's access to financial resources and education.



22 Technical sessions on ISO 50001 Certification: Requirement and Feedback



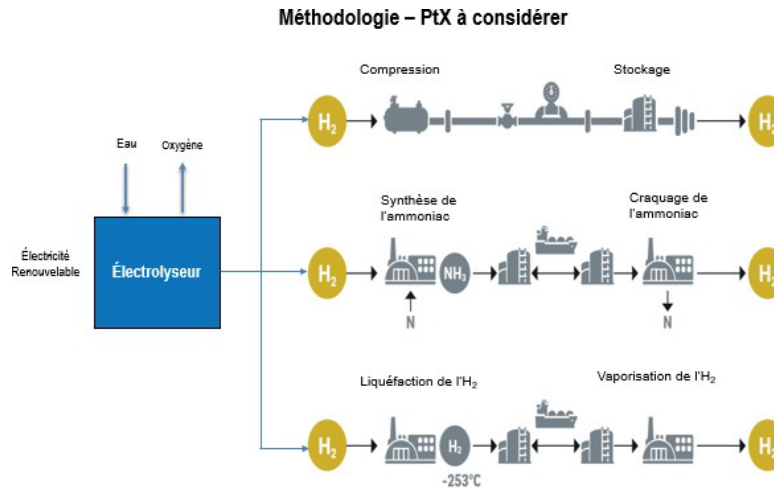
In the context of its cooperation with Sonatrach, on 29 May 2022 the German-Algerian Energy Partnership took part in a technical session in Oran on ISO 50001 Certification: Requirement and Feedback.

During the event, the Partnership presented the different renewable energy-related activities undertaken with Algerian energy sector institutions, such as the development of a regulatory and incentive framework for energy efficiency in the country; the creation of a business energy efficiency network (REEE); and the training and coaching of Sonatrach's energy auditors in 2018, the second phase of which will take place in the second half of 2022 and focus on thermal energy.

Participating in this technical session were the certifying bodies TÜV Rheinland and the French Standardisation Association (AFNOR) as well as representatives from the national specialist bodies APRUE, the Algerian Institute of Standardisation (IANOR) and CEREFÉ.

The event provided the opportunity to share information and raise awareness about the legal, regulatory and normative provisions governing energy management and energy auditing. It also aimed to ensure that all the participants understood the importance of making companies energy efficient and the challenges involved.

23 Analysing the transport and logistics options for exporting PtX products from Algeria to Europe



Source: Roland Berger (2021). *Hydrogen transportation | The key to unlocking the clean hydrogen economy*

On 15 June 2022 an inception workshop on analysing the transport and logistics options for exporting PtX products from Algeria to Europe was held at Sonatrach headquarters. Algeria was represented at the workshop by delegates from MEM, Sonatrach, CDER and the National Agency for the Promotion of Research and Technological Development Results (ANVREDET), and Germany by delegates from the German-Algerian Energy Partnership and GFA Consulting Group.

The purpose of this work is to perform a comparative analysis of modes of transportation for green hydrogen and its derivatives (PtX) with a view to exporting them to Europe and Germany by sea or pipeline.

The Algerian contingent emphasised the importance of this analysis, which will prove particularly helpful to the Algerian authorities tasked with drawing up the national hydrogen strategy.

24 Evaluation of the 2018 tendering process for CREG's energy auctions

FICHTNER



Commission
de Régulation
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Evaluation d'AO aux
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As part of the work to evaluate the tendering process for the 150 MW energy auctions issued by CREG in 2018, a debriefing workshop was held on 28 June 2022 at the Commission's headquarters, bringing together representatives from CREG, GIZ and the German engineering consultancy Fichtner.

The workshop, held in the context of the implementation of Algeria's renewable energy and energy efficiency development plan, aimed to examine, contribute to and rework the tender specifications for auctions to

implement solar PV energy generation projects with a capacity below 20 MW.

The Fichtner team presented an assessment of the problems and challenges arising in the 2018 tender process. The participants then discussed conditions for participation, the ceiling price and how to determine it, the submission procedure, financing and the terms and conditions of the power purchase agreement. The Fichtner consultants provided a number of recommendations on the design of tender specifications, with the aim of making calls for tenders more attractive in future.

25 Development of the regulatory and incentive framework for energy efficiency in Algeria

Within the framework of the German-Algerian Energy Partnership and in collaboration with German research institute Fraunhofer, a study was carried out on the development of the regulatory and incentive framework for energy efficiency in Algeria. This involved reviewing the entire regulatory, incentive and institutional framework for energy efficiency in Algeria – including Law 99-09 pertaining to energy management and the National Fund for Energy Management for Renewable Energy and Cogeneration (FNMEERC) and the key technical documents and all further legislation resulting from this Law.

Algeria's APRUE, under the authority of MTEER, is in charge of implementing energy management policy, so the country already has in place the key institutions required. However, an analysis of Algeria's current set-up shows that, while the fundamentals of this framework are satisfactory, there are many gaps that seriously limit the potential for reducing energy consumption on the ground. In the final stage of the study, benchmark cases from Germany, Tunisia and Saudi Arabia were used to inform the development of recommendations aimed at improving the framework.

The report on this study's findings is available for download on the German-Algerian Energy Partnership website: www.energypartnership-algeria.org.



27 Fourth German-Algerian Energy Day

Together towards new sustainable energy solutions

The Energy Partnership has been holding its flagship annual event, the German-Algerian Energy Day, since 2018. The purpose of these Energy Days is to share the results of technical cooperation and deepen networking and policy dialogue between Algeria's MEM and Germany's BMWK.

This fourth German-Algerian Energy Day took place in hybrid form – both online and in person – on 20 December 2022 at the Hotel El-Djazair in Algiers, with hundreds of delegates taking part. With the theme 'Green hydrogen, renewable energy and energy efficiency – together towards new sustainable energy solutions', the event provided Algeria and Germany with a platform to share expertise and discuss policy in the areas of decarbonisation and GHG reduction in implementation of the Paris Agreement, particularly through the development of the green hydrogen sector.

Opening with speeches by senior officials from MEM and BMWK, the bilateral conference centred on the promotion of green hydrogen in Algeria, its technological potential and the prospects for its use in the industrial sector. The development of solar programmes and the regulatory framework for energy efficiency in Algeria, including the in-depth study carried out by Fraunhofer on this important topic, were also the subject of presentations and discussions at the conference.

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